COASTAL CONSERVANCY

Staff Recommendation
November 30, 2017

Malibu Living Shoreline Project

Project No. 17-031-01
Project Manager: Evyan Sloane

RECOMMENDED ACTION: Authorization to disburse up to $250,000 to The Bay Foundation for the design and implementation of dune restoration and monitoring at Zuma and Point Dume County Beaches in the City of Malibu.

LOCATION: Zuma and Point Dume County Beaches, City of Malibu, County of Los Angeles (Exhibit 1).

PROGRAM CATEGORY: Climate Adaptation, Resource Enhancement

EXHIBITS

Exhibit 1: Project Location Maps

Exhibit 2: Photos of Proposed Project Area

Exhibit 3: Project Letters

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31113 and 31251-31270 of the Public Resources Code:

"The State Coastal Conservancy hereby authorizes the disbursement of up to two hundred fifty thousand dollars ($250,000) to The Bay Foundation for the design and implementation of dune restoration and monitoring at Zuma and Point Dume County Beaches. No Conservancy funds shall be disbursed until the Executive Officer of the Conservancy has reviewed and approved in writing:

1. A work program, budget, schedule, and the names of any contractors to be employed in carrying out the work.
2. Evidence that all required permits and approvals have been obtained for the project.
3. Evidence that the grantee has entered into agreements sufficient to enable the grantee to implement, operate, and maintain the project.

Staff further recommends that the Conservancy adopt the following findings:

"Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed authorization is consistent with Chapter 3 of Division 21 of the Public Resources Code (Section 31113), regarding addressing the impacts of climate change and Chapter 6 of Division 21 of the Public Resources Code (Sections 31251-31270) regarding resource enhancement.
2. The proposed project is consistent with the current Conservancy Project Selection Criteria and Guidelines.
3. The Bay Foundation is a nonprofit organization existing under section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the Public Resources Code."

PROJECT SUMMARY:

Staff recommends the Conservancy disburse up to $250,000 to The Bay Foundation ("TBF") to design and implement dune restoration and monitoring at Zuma and Point Dume County Beaches (see first map in Exhibit 1). The proposed project ("project") will restore 3 acres of sandy beach and dunes. It is also a pilot project in that it will test the efficacy of natural, dune habitat to provide a living shoreline approach to protect against the effects of sea-level rise and coastal storms. The project includes meetings with key stakeholders and community members, development of restoration designs and a pre- and post-construction monitoring plan, implementation of the restoration and monitoring plans, and installation of interpretive signs.

The project's restoration design elements will include the removal of non-native vegetation in the project sites, followed by seeding and planting of native vegetation (see third and fourth maps in Exhibit 1 for removal and planting locations) and strategic placement of pathways for pedestrians. These plantings of native vegetation will enable existing dunes to build and new dunes to form, by helping to trap wind-borne sediment. No outside sediment will be transported into the project area; only existing sediment moved by natural processes such as wind and waves will be used for project implementation.

To start the project, TBF will continue meetings with key stakeholders, many of whom were involved with a previous dune restoration project in Santa Monica, and will add a larger group of scientists, beach managers, community members, and other interested parties to discuss project plans and gain expert input. Targeted outreach to community stakeholders will be conducted via a diverse array of public meetings, a press release, newsletters, websites, and social media.

Using the stakeholder input, TBF will then prepare a restoration plan, a pre- and post-construction monitoring plan, and all necessary permit applications. The restoration plan will include details on the fence material and placement locations, interpretive sign design and placement locations, non-native vegetation removal techniques, native vegetation species for seeding, and implementation logistics. The monitoring plan will include a baseline and details

for post-restoration monitoring in order to demonstrate the effectiveness of using native dune habitat as coastal protection. Perspective renderings will show the vision and character of the project and be extremely useful as a communication aid for community outreach. In 2015 alone, over 70 million people visited beaches in Los Angeles County, and Zuma Beach is one of the largest and most popular destination of all of LA's beaches with more than 5,000,000 visitors per year—this provides a great opportunity for public education of the importance of native dune habitat and living shorelines through interpretive panels.

Although sandy beaches traditionally have been, and continue to be, managed primarily as recreation areas, they are also important natural ecosystems that link marine and terrestrial environments. The protection and understanding of sandy beaches and dune habitat condition has become increasingly important in their relationship to sea-level rise and coastal resilience.

Historically, large expanses of dunes once covered the coastal zone at both Zuma and Point Dume County Beach (see first map in Exhibit 1). Due to urban development, the majority of these historical dunes have disappeared. Beaches in Los Angeles County provide a first line of defense from coastal hazards brought by sea-level rise, increased storminess, and erosion processes. Moreover, sandy beaches in Los Angeles County have been severely altered by human intervention such as sand replenishment, daily mechanized maintenance, vehicular transport, and the removal of native vegetation. There has been an associated loss of natural beach morphology that threatens not only the beaches themselves, but infrastructure built directly adjacent to these sensitive habitat systems. Restoring natural processes to impacted beach habitats will improve natural functions and create a diverse native ecosystem that manages sand transport in a way that will build resiliency in the face of climate change.

TBF is one of the few organizations in Southern California with experience in implementing living shoreline projects. Additionally, TBF draws from an extensive network of partners that continually provide new and better ways to implement and monitor beach restoration projects. The concept of "living shoreline" restoration in Southern California is new and innovative, and this project has the potential to inform future projects in the region, providing guidance from project development to outreach and permitting to implementation and monitoring practices. TBF's experience from implementing the Santa Monica Beach Restoration Pilot Project in late 2016 has prepared TBF to implement restoration and monitoring practices that have proved successful in sandy beach and dune restoration. For the proposed project, initial concepts arose from the City of Malibu ("City"), which approached TBF. Since then, TBF has been working with the City's Environmental Sustainability Department. Los Angeles County Department of Beaches and Harbors (LA B&H) was brought into project planning after initial discussions and is now interested in the project primarily due to the benefits of increased coastal resilience and taking critical steps to protect its beach facilities. TBF, the City, and LA B&H will enter into a Memorandum of Understanding (MOU) similar to the one developed for the Santa Monica Beach Restoration Pilot Project where TBF will be responsible for project implementation, pre- and post-construction monitoring, and maintenance in the short-term (i.e. 5-10 years) and LA B&H will be responsible for maintenance in the long-term (at least 20 years).

Site Description: Zuma Beach and Point Dume (Westward) Beach are owned by the Los Angeles County and managed by LA B&H. Historically, dune systems were a prominent feature of this area and overtime with increased development and urbanization these dune features

disappeared. The project site comprises 1 acre at Zuma Beach and 2 acres at Point Dume Beach. As shown in the project site photos (Exhibit 2), the dune system present at Zuma Beach is largely overrun by invasive vegetation, including large monocultures of invasive iceplant (*Carpobrotus edulis*), searocket (*Cakile maritime*), and non-native grasses. Small patches of native beach bur (*Ambrosia chamissonis*) have been observed, but this system is dominated by non-native species. The project area at Point Dume is comprised of small, sporadic dune hummock buffering along the edge of the beach lining the parking lot. Practically no native coastal strand vegetation species can be found here, and those areas that are vegetated are covered with invasive species. Both sites border the 16-square mile Point Dume State Marine Protected Area, and U.S. Fish and Wildlife Service has designated the area as critical habitat for the Federally-threatened western snowy plover and the Federally-endangered least tern (see the second map in Exhibit 1). The Zuma Beach restoration site is directly adjacent to Zuma Lagoon which is designated critical habitat for the Federally-endangered tidewater goby (see the second map in Exhibit 1).

Project History: In April 2016, Los Angeles County published the *Los Angeles County Public Beach Sea-Level Rise Vulnerability Assessment*, made possible by a Climate Ready Grant from the State Coastal Conservancy. This assessment identified public beach facility assets at Zuma and Point Dume County Beach, where the project will occur, as vulnerable to sea-level rise. Collectively there are 33 assets, including a concession, multiple lifeguard buildings, a maintenance yard, parking lots, restrooms, and an access road at Zuma and Point Dume County Beach. These assets comprise the essential components that are needed to support and promote safe public beach recreation opportunities. The study identified that if no protection measures are implemented, assets at Zuma and Point Dume County Beach will be vulnerable to inundation damage under high sea-level rise projections. Additionally, with no shoreline protection measures implemented, the analysis suggests that Zuma and Point Dume County Beaches could lose up to 50% of beach by 2040, and up to 70% of beach by 2100. The proposed Project provides a cost-effective and low-impact solution to increase the resiliency of the shoreline at Zuma and Point Dume County Beach.

PROJECT FINANCING

Conservancy	$250,000
City of Malibu	~$5,000
The Bay Foundation (in-kind)	~$67,628
City of Malibu (in-kind)	~$15,000
Los Angeles Beaches & Harbors (in-kind)	~$15,000
Project Total	**~$352,628**

The anticipated source of funding for this project ($250,000) is the fiscal year 2017 appropriation from the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1, Water Code § 79700 *et seq*). Funds appropriated to the Conservancy derive from Chapter 6 of the Act (commencing with § 79730) and may be used "for multi-benefit water quality, water supply, and watershed protection and restoration projects for the watersheds of the state"

(Section 79731). Section 79732(a) states more specifically that these funds may be used to "implement watershed adaptation projects in order to reduce the impacts of climate change on California's communities and ecosystems" (section 79732(a)(2)) and to "protect and restore aquatic, wetland, and migratory bird ecosystems" (section 79732(a)(4)). Consistent with these provisions, the project will design and implement the restoration of 3 acres of native dune habitat, an aquatic ecosystem that supports many native species including some state and federally listed bird species. Implementation of the project will also further the beaches adaptation to climate change by testing a "living shoreline" approach to flood and erosion protection in the face of rising seas. As required by Proposition 1, the project will provide multiple benefits. First, the project will fill an ecological void for the region by restoring native dune habitat. Second, the project will test a sea-level rise adaptation strategy using a "living shoreline" approach rather than grey infrastructure such as a sea wall. Finally, the project will help reestablish an appreciation that has been lost in the Los Angeles region of natural, function beach ecosystems by providing educational and recreational opportunities at the project sites.

The project was reviewed and subsequently recommended for funding through a competitive grant process under the Conservancy's *Proposition 1 Grant Program Guidelines* adopted in June 2015 ("Prop 1 Guidelines"). (See § 79706(a)). The project meets each of the evaluation criteria in the Prop 1 Guidelines as described in further detail in the following sections of this staff recommendation: "Project Financing" and "Project Summary" (sections above) and "Consistency with Conservancy's Project Selection Criteria & Guidelines" (section below).

The grantee will provide approximately sixty-seven thousand six hundred twenty-eight dollars ($67,628) of in-kind match support to the project to include services such as staff time, volunteer time, donated materials, and bargain sales on materials. Project partners, the City of Malibu and LA B&H, will also provide in-kind support of approximately thirty-thousand dollars ($35,000) to provide staff contributions in all necessary meetings and outreach events. The grantee and project partners will provide SCC with documentation (e.g. timesheet records) of all in-kind expenses throughout the project.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

The project will be undertaken pursuant to Chapter 3 of the Conservancy's enabling legislation, (Public Resource Code Section 31113) and Chapter 6, resource enhancement (Public Resources Code Sections 31251-31270).

Section 31113 permits the Conservancy to address the potential impacts of climate change on resources within its jurisdiction. Pursuant to this authorization, the project will construct native dune habitat as a natural solution for resource adaptation to address sea-level rise.

Consistent with Section 31251, the project will implement corrective actions (sandy beach and dune restoration) to enhance natural resources, specifically the dunes along the coast of Los Angeles County that have suffered the loss of natural and scenic values due to urban development. The project is intended to assist the Conservancy in meeting its purposes and objectives under this section by increasing the feasibility, cost-effectiveness, and persistence of restoration and enhancement projects in Southern California's coastal zone and coastal watersheds. Consistent with Section 31251, TBF is a non-profit and therefore qualifies for a grant from the Conservancy under Chapter 6.

The project is consistent with Section 31252 because the City's current Local Coastal Program (LCP) identifies coastal dunes as Environmentally Sensitive Habitat Areas (ESHA) and calls for

dune ESHA to be "protected and, where feasible, enhanced." (Section B 3.16 of the LCP.) That same LCP section also designates that areas where "pedestrian access through dunes is permitted, well-defined footpaths or other means of directing and minimizing adverse impacts shall be used." Therefore, the project is consistent with Section 31252 regarding LCP goals because it will enhance native dune habitat as well as create a defined path for pedestrians to minimize the impacts of humans on the native habitat.

Section 31253 permits the Conservancy to provide up to the total cost of any coastal resource enhancement project, consistent with established project eligibility and priority factors. In determining the amount of Conservancy funding for this proposed project, the factors identified in Section 31253 were considered and applied, as described in detail in the section "Consistency With Conservancy's Project Selection Criteria & Guidelines," below. Additionally, the project was reviewed and subsequently recommended for funding through a competitive grant process under the Conservancy's *Proposition 1 Grant Program Guidelines*.

CONSISTENCY WITH CONSERVANCY'S ACCESS PROGRAM STANDARDS:

Standard No. 1, Protect Public and Coastal Resources: The project will safely accommodate public use by having adequate barriers and signage to prevent misuse of coastal resources.

Standard No. 2, Correct Hazards: The project's symbolic pedestrian pathways will not increase the potential for any hazard, such as fire or erosion.

Standard No. 5, Environmentally Sensitive Areas: The project will restore native dune habitat, which is an environmentally sensitive area, and then protect the habitat from pedestrian foot traffic and trampling by creating a symbolic pedestrian pathway through the project area.

CONSISTENCY WITH CONSERVANCY'S 2013 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S), AS REVISED JUNE 25, 2015:

Consistent with **Goal 5, Objective B** of the Conservancy's 2013-2018 Strategic Plan, the project will restore approximately 3 acres of sandy beach and coastal dune habitat.

Consistent with **Goal 7, Objective D**, the project will implement an adaptation strategy to address threats to coastal communities in a way that protects natural resources and provides maximum public benefits.

Consistent with **Goal 9, Objective B**, the project will expand environmental education by designing and installing interpretive signage at these two beaches that are visited by more than five million people every year.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on October 2, 2014, in the following respects:

Required Criteria

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Promotion and implementation of state plans and policies:** The project is consistent with the following state plans and policies promoting global climate change resilience and adaptation:
    a. The proposed project implements *California @ 50 Million: The Environmental Goals and Policy Report* (Governor's Office of Planning and Research, 2013 Draft) by pursuing the action to invest in climate adaptation pilot programs, tools and approaches.
    b. The proposed project aligns with the goals listed in the *CA Climate Adaptation Strategy/Safeguarding California: Reducing Climate Risk Plan* (CA Natural Resources Agency, July 2014) by implementing an innovative shoreline management project. The project will provide insight into managing shorelines in the era of rising sea levels and storm surges.
    c. The project will implement the *Regional Strategy* for the Southern California Wetlands Recovery Project (2001) by restoring dunes to protect coastal communities.
4. **Support of the public:** The project is supported by a number of local organizations. See Exhibit 3 for new support letters from the City of Malibu's mayor Skylar Peak, the U.S. Fish and Wildlife Service, the U.S. Geological Survey, University of Southern California Sea Grant, the Tijuana River National Estuarine Research Reserve, and Heal the Bay.
5. **Location:** The project area is located within the coastal zone at Zuma and Point Dume County Beaches in the City of Malibu and County of Los Angeles.
6. **Need:** The City of Malibu and LA B&H were not able to identify current budget capacity to contribute cash to the project although in-kind contributions will be made by attending project meetings, conducting site visits, and coordinating among City and LA B&H departments. Once construction is complete, the City of Malibu will make a small cash contribution ($5,000-$10,000) for interpretive signage and outreach. With this major funding gap, the project would not get implemented without Coastal Conservancy funding.
7. **Greater-than-local interest:** Developing and implementing living shorelines projects is of interest for the entire State. The information gathered from the project will allow the Conservancy and other state and federal agencies and non-profits to replicate projects like this throughout the State.
8. **Sea level rise vulnerability:** The project proposes management actions to maintain and restore dunes and encourage natural dune processes. Beach habitats and dunes are critical in managing sand transport to create resilient beach morphologies, which naturally adapt to climate change impacts. A major goal of this project is to decrease the current sea-level rise vulnerability at Zuma and Point Dume beaches through the strategic restoration of sandy beach habitat and dunes. The project is designed to have a long-lasting lifespan under future sea-level rise scenarios and increased coastal storm impacts. Map 5 in Exhibit 1 shows

results from the recent Coastal Storm Modeling System (CoSMoS) efforts for the proposed project area. Because beach dunes accrete sediment transported from the ocean they will continue to grow concurrently with rising sea levels. This dynamic process can continue as long as the vegetation community is robust and healthy. The grantee will continue to use sea-level rise modeling tools, expert technical guidance, and comprehensive monitoring to inform sea level vulnerability at the restoration site.

Additional Criteria

9. **Urgency:** The project is urgent as threats of sea-level rise continue to increase in California's coastal zones. California needs pilot, demonstration living shoreline projects in order to successfully communicate the benefits of using nature to defend against the effects of sea-level rise as well as to successfully implement larger-scale living shoreline projects.
10. **Resolution of more than one issue**: The project resolves many issues in the region including the absence of native dune habitat, lack of local knowledge in living shoreline approaches for sea level rise adaptation, and education about dune habitat and living shoreline approaches for coastal protection.
11. **Leverage**: The grantee will provide approximately $67,628 of in-kind matching funds to include staff time, volunteer time, donated materials, and bargain sales for the proposed project (see "Project Financing"). The City of Malibu and LA B&H will also contribute approximately $30,000 in the form of staff time on all necessary coordination meetings and community outreach.
12. **Innovation**: Living shorelines projects, such as the one proposed, are an innovative approach to sea-level rise adaptation.
13. **Readiness**: The grantee has implemented similar projects in the past (i.e. Santa Monica Beach Living Shoreline Project) and is ready to implement the proposed project as soon as the funds are authorized for disbursement.
14. **Realization of prior Conservancy goals**: "See "Project History" above."
16. **Cooperation**: The City of Malibu's Environmental Sustainability Department has been working with the grantee on developing initial concepts for the proposed project in the past. The City is supportive of the project and believes it will be "a major step" in the right direction for climate adaptation planning in the City (see Letter of Support on Exhibit 3).
15. **Vulnerability from climate change impacts other than sea level rise:** California native plants are naturally acclimatized to local weather and climate and have a high adaptive capacity for surviving drought conditions. Additionally, dune and beach species are adapted to survive often harsh beach conditions. Although California native beach and dune plants are naturally acclimated to local weather and climate conditions and highly adapted to drought, unmanaged they are vulnerable to the spread of invasive plants that reduce biodiversity, alter soil chemistry, and consume a disproportionate amount of water and soil resources. Through adaptive post-implementation management, a rigorous monitoring plan will be implemented and standard operating procedures followed to assure that the spread of invasive plants is monitored and mitigated while newly planted/seeded native plants have

time to take root, become established, and eventually seed. Partners, staff, and community volunteers will participate in regular weeding events to maintain and enhance the project site.

16. **Minimization of greenhouse gas emissions:** The grantee will use best management practices to reduce greenhouse gas emissions and the carbon footprint associated with this project. The primary source of greenhouse gas emissions associated with this project are expected to come from vehicles used to attend project planning and outreach meetings and to travel to the project site for implementation and monitoring activities. The grantee will minimize its carbon footprint associated with project associated travel by carpooling whenever possible. Overall, it is anticipated that once the project is implemented and vegetation begins to establish and become self-sustaining, the site will serve to sequester carbon through photosynthesis, plant roots, and soil storage. Coastal habitats such as dune systems have the capacity to sequester carbon at a rapid rate and the relative carbon storage potential of coastal habitats is now considered to play a significant role in the regulation of both local and global climate.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

The project is consistent with the City's certified Local Coastal Program in its goals to protect and enhance Environmentally Sensitive Habitat Areas including coastal dunes as well as to create public access (i.e. pedestrian pathways) that avoid direct impacts to such habitats. See "Consistency with Conservancy's Enabling Legislation" above.

COMPLIANCE WITH CEQA:

The Malibu Living Shorelines Project is categorically exempt under CEQA pursuant to 14 California Code of Regulations Section 15333, which exempts the maintenance, restoration, enhancement, or protection of habitat for fish, plants, or wildlife provided that the project: (a) does not exceed five acres in size, (b) does not create a significant adverse impact on endangered, rare or threatened species or their habitat pursuant to section 15065, (c) is not located where there are hazardous materials that may be disturbed or removed, and (d) will not result in impacts that are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. The project consists of the planting of native plants, removal of invasive plants, and utilization of existing sediments to passively restore and transform approximately 3 acres of sandy beach habitat into a sustainable coastal strand and dune habitat complex increasing resiliency of the beach to sea level rise. The project will benefit habitat for native dune plants and for threatened and endangered birds. The project is not located where hazardous materials could be disturbed or removed. Finally, the project will not result in adverse cumulative impacts. Upon approval, staff will file a Notice of Exemption that this proposed project is exempt from CEQA.